

# Common Assumptions Characterization and Quantification Briefing

Presented To: BDPAC Water Supply  
Subcommittee  
January 11, 2006

# Presentation Overview

- Common Assumptions refresher
- Purpose for characterization and quantification
- Overarching methodology
- Resulting future baseline conditions
- Water supply options and contingency measures
- Next steps

# Common Assumptions Refresher

# Objectives

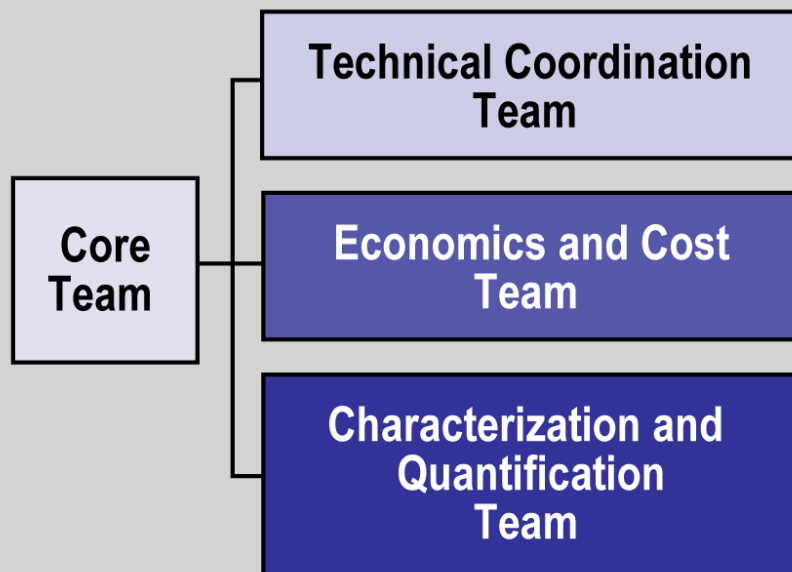
- Support the Surface Storage Investigations by:
  - Assist/coordinate in strategic planning, policy and management needs
  - Establish *common assumptions/inputs*
  - Establish *common analytical framework* and associated tools and methodologies for integrated hydrologic and economic analysis
  - Establish *common reporting metrics* for assessing the impacts and benefits of projects, and
  - Establish *modeling protocols* and quality control measures

# Major Efforts

- Development of Analytical Framework and Models of the **Common Model Packages** (CMPs)
- Economic and Cost Analyses
  - Ag and Urban economics methods and assumptions
  - Cost estimation methods and assumptions
- Characterization and Quantification of Water Management Options:
  - Agricultural & urban water use conservation
  - Recycling & desalination
  - Water transfers
  - Local groundwater resources

# Organization

## Common Assumptions Teams



**Core Team** -- Representatives from Reclamation, DWR, and Authority

**Technical Coordination Team** -- Refinement and development of common model packages

**Economics and Costs Team** -- Refinement and development of common economics models and procedures

**Characterization and Quantification Team** -- Characterization of conservation, local supply projects, transfers, and conjunctive use

# Characterization and Quantification

# Purpose

Provide detailed information to the surface storage project managers and team members regarding characterization and quantification of future baseline conditions for demand management and local supply augmentation actions for reflection in the Plan Formulation Report Common Model Package (PFCMP)

# Overarching Methodology

# Future Baseline Policy Basis “reasonably foreseeable”

- Include all local water supply and demand management projects and programs that are permitted and/or funded as of June 1, 2004. In addition, the following will apply:
  - existing state and federal implementation funding programs will be expected to continue and/or allocate their funds to local projects (i.e. SRF, Prop 13 & 50, Title XVI)
  - local expenditure for implementation of local projects and programs will be expected to follow the historic rate of investment for urban conservation, while ag conservation will follow the sector’s investment in locally cost-effective actions

# Coordination...

- With other state-wide programs: ensure consistent data sources and methodologies
  - California Water Plan Update
  - CALFED Water Use Efficiency Year Four Comprehensive Evaluation
- Goal: improved stakeholder acceptability and understanding of data and assumptions across projects

# Coordination... (cont.)

- Underlying data
  - Statewide programs
  - Prop 13, Prop 50, SWRCB grants/loans
  - Short/long-term EWA, SDIP, DIP
  - USBR water acquisition, DWR water transfer office
  - MWD studies, BAWQSRS, other local information
- Outreach and buy-in
  - LCPSIM review team
  - BDPAC WS and WUE subcommittees
  - Surface storage investigation teams
  - Ad-Hoc Technical Work Group

# Reflection into PFCMP

- Future baseline results need to be reflected in:
  - CALSIM II
  - LCPSIM (Bay Area Southern Region and South Coast versions)
  - CVPM
- Not all data can/will be incorporated as a result of current model configurations

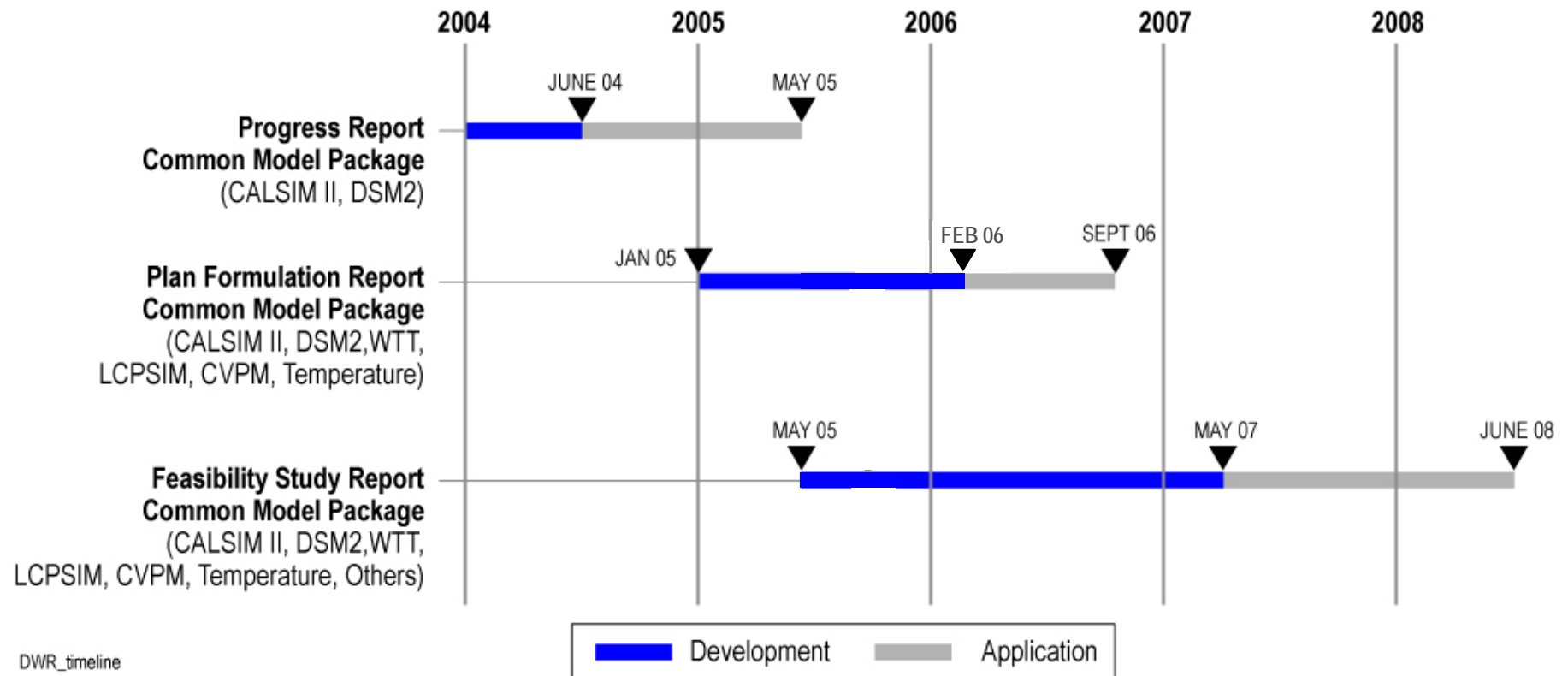
# Documentation

- Methods, data, processes and results
- Incorporate into broader PFCMP documentation
- Available early spring 2006 - shortly after availability of PFCMP to project teams

# Re-evaluation for FSCMP

- FSCMP is scheduled for May 2007
  - Between PFCMP release and FSCMP development
    - review assumptions based on improved tools and new data
    - Update assumptions as needed
    - Incorporate more results as allowed by improved tools

# Common Model Package - Timeline -



# Resulting Future Baseline Conditions

# Urban Conservation

## - Process -

### **Urban Conservation**

- Include savings from plumbing code, CUWCC trends & Prop 50 WUE \$
- Compared results to water agency forecast data to understand and explain any differences

# Urban Conservation

## - Results -

- Assumed savings (2020)
  - South Coast = **382,000** acre-feet
  - Bay Area = **144,000** acre-feet
- Applied Water Target (2020)
  - South Coast = **4,672,000** acre-feet
  - Bay Area = **1,126,000** acre-feet

# Agricultural Conservation

## - Process -

- Used CBDA WUE results for Projection Level 1: Reasonably Foreseeable
  - Used existing cropping pattern
  - locally cost-effective practices plus state investment in non-locally cost effective practices.
  - \$15m/yr for 2004-6 (3 yrs: Prop 50 Ch 7)
  - \$2m assumed from Prop 50 Ch 8

# Agricultural Conservation

## - Results -

- Assumed savings per year (2020)
  - On-farm = **148,000 af (rec) 33,000 af (irrec)**
  - District = **4,000 af (rec) 1,000 af (irrec)**

# Water Recycling

## - Process -

- Compiled comprehensive data set
- Established baseline of existing yield
  - SWRCB 2002 survey, help from CBDA WUE
  - Exclude gw recharge, saline barrier and wetlands
- Identified future baseline yield using a subset of remaining projects as an indicator

# Wastewater Recycling

## - Results -

- Yield estimates are limited to uses that help offset demands represented in the models
  - Not groundwater recharge, wetland enhancement, or saline barriers

	Bay Area – Southern	South Coast
Existing	43,050 af	175,000 af
Future Base (increment)	32,150 af	293,000 af
Total	75,200 af	468,000 af

# Desalination

## - Process -

- Compiled comprehensive data set
- Established baseline of existing yield
  - assistance from CBDA WUE and DWR Inventory
  - Limited to seawater desalination (not gw treatment)
- Identified future baseline yield using a subset of remaining projects as an indicator

# Desalination

## - Results -

- Yield estimates are limited to ocean and brackish water projects that truly provide new yield
  - Not groundwater recharge, wetland enhancement, saline barriers

	Bay Area – Southern	South Coast
Existing	0 af	500 af
Future Base (increment)	10,160 af	43,700 af
Total	10,160 af	44,200 af

# Local Groundwater

## - Process -

- Urban groundwater resources include:
  - Local constant supply
  - Variable supply – locally banked
  - Variable supply – externally banked
- Based on information obtained from regional documents and agency interactions
  - LCPSIM review group

# Local Groundwater

## - Results -

- Assumed urban groundwater supply (2020)
  - Bay Area = 41 taf (constant supply)  
= 655 taf (locally banked capacity)  
= 565 taf (externally banked capacity)
  - South Coast = 1,155 taf (constant yield)  
= 1,547 taf (locally banked capacity)  
= 910 taf (externally banked capacity)
- Assumed agricultural groundwater supply (2020)
  - Quantities based on Water Plan Update estimates
  - Pumping costs based on earlier estimated lifts (CVGSM)
  - Further refinements expected for FSCMP

# Long-term Transfer Agreements

- Fixed amount: IID to Met, IID to San Diego
- Phase 8
- EWA
- Refuge Level IV
- SJRGA to Reclamation (VAMP)
- Some within CVP and within SWP transfers
  - BBID to Zone 7
  - Mojave to Solano County
  - SSJID to SEWD, Tracy, Escalon, Lathrop

# Options and Contingency Measures

# Definitions and Use

- Economic decisions in LCPSIM
- Long-term option – action that once implemented will be available in all subsequent years
  - Additional conservation, recycling, desalination, and groundwater storage
- Contingency measure – action that is exercised periodically as needed and as allowed under associated agreements
  - Long-term water transfer option arrangements
  - Spot market single year water transfers

# Characterizations & Quantities

- Urban conservation
  - Increments up to CBDA WUE Proj. Level 6
- Recycling and desalination
  - Increments from remaining projects in data set
- Optional transfer agreements:
  - IID/Coachella to Met, PVID to Met
- Spot market single year water transfers
  - See following...

# Spot Market Single Year Transfers

## - Results -

**MAXIMUM AVAILABLE SUPPLY** – based on stored water, groundwater substitution, crop shifting or idling rice or cotton, **INCLUDING** transfers for EWA or Level 4 refuges

(1,000 acre-feet)	Wet/above normal	Below normal	Dry	Critical
Yuba River	100	100	150	190
Sacramento River	175	175	175	175
Feather River	155	155	155	155
Other Sacramento Valley	100	100	100	100
San Joaquin Valley	350	330	330	330

# Next Steps

# Characterization

## - Next Steps -

- Continue reflection of values into PFCMP
  - LCPSIM , CALSIM, CVPM
- Finalize detailed appendixes and summarize in PFCMP documentation

# Summary

- Future baselines have been set to meet NEPA “reasonably foreseeable” test
- Extensive coordination with state programs and local parties improve the validity and acceptability
- Future baseline conditions will be re-evaluated for the FSCMP